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Cancer in South Dakota 2001

by Mynna Boodhoo Kightlinger, MSPH, South Dakota Cancer Registry Coordinator

The South Dakota Cancer Registry (SDCR) recently released its annual report for 2001. Hard copies are available by contacting the Department of Health at 605-773-3737 and also online at

www.state.sd.us/doh/Pubs2/Cancer2001.pdf

This article contains cancer incidence, mortality and behavioral data. Some highlights are:

Incidence 2001

One year of data is presented and should not be interpreted as a trend because there could be considerable variation from year to year especially in counties with small populations.

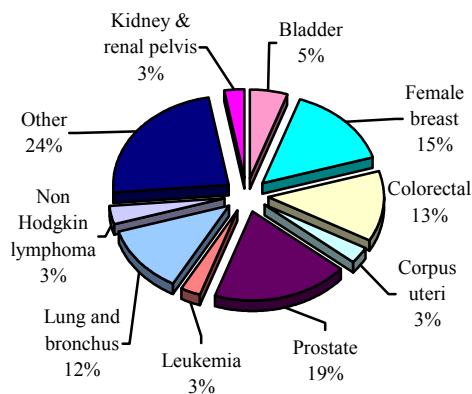
- 3,411 cases of invasive cancer and 232 in situ cancers were collected.
- Of the 3,481 cases included in rates,¹ 3,200, or 92% were white and 103 or 3% were American Indian.

- The top four cancers reported were prostate, female breast, colorectal and lung/bronchus, accounting for 59%.
- 19% of all cancers reported were at distant stage at diagnosis with 20% among whites and 22% among American Indians.
- The most common cancers had higher counts in age groups over 50 years with 88% of all cancers diagnosed in persons over 50 years old, the most being 30% among the 65-74 age group.
- 30% of Hodgkin lymphoma occurred in children 0-19 and another 30% were among the 20-34 year old group.
- 46% of Non-Hodgkin lymphoma were among the 65-74 age group. This was the highest percentage for any age group for a cancer site.
- Overall, more males than females were reported to the central registry.

¹ Rates include all invasive cancers and only *in situ* bladders.

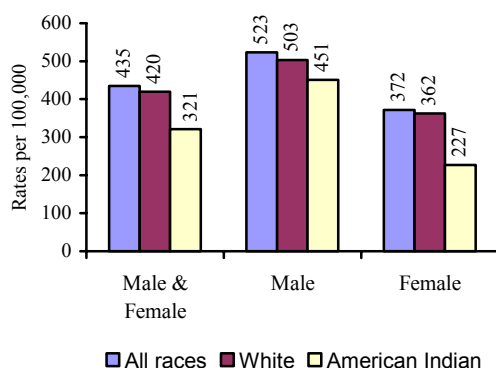
- South Dakota's age adjusted incidence rate was 434.8 cases per 100,000 persons.
- Age-adjusted cancer incidence ranged from a low of 129.1 cases per 100,000 cases in Perkins County to a high of 658.4 per 100,000 persons in Brule County.

Cancer Incidence, Selected Sites, South Dakota 2001



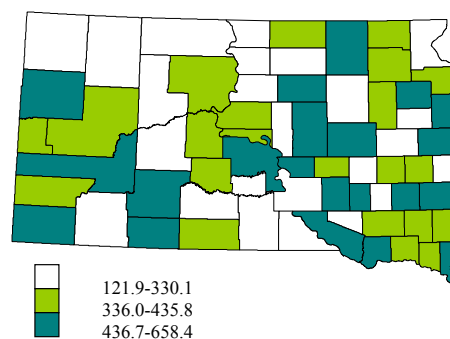
Source: South Dakota Department of Health

Age-Adjusted Incidence Rates by Race and Gender, South Dakota 2001



Note: Rates are per 100,000 persons age-adjusted to the 2000 U.S. standard population
Source: South Dakota Department of Health

Cancer Incidence by County South Dakota 2001



Note: Rates are per 100,000 persons and age-adjusted to the 2000 U.S. standard population

Source: South Dakota Department of Health

Age-Adjusted Incidence Rates for Selected Cancers by Race, South Dakota 2001

Primary site	Total	White	American Indian*
All sites	434.8	420.2	320.8
Breast, female	128.5	130.1	39.8
Cervix uteri	7.3	6.7	14.9
Colorectal	53	50.3	40.4
Lung & bronchus	53.2	52.4	70.3
Melanoma	11.7	9.8	5.0
Ovary	12.7	12.8	0
Pancreas	9.3	9.7	4.0
Prostate	185.5	178.2	142.7

Note: Rates are per 100,000 persons, age-adjusted to the 2001 U.S. standard population

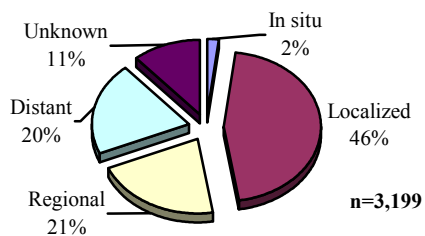
* All counts are ≤ 20 ; therefore, the rates are considered unstable and should be interpreted with caution

Source: South Dakota Department of Health

Stage at Diagnosis

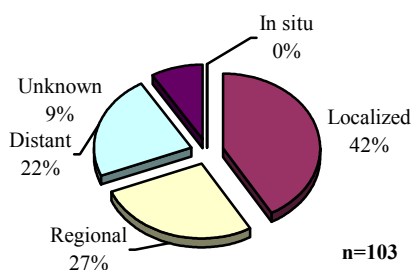
- Overall, 19% each of cancer cases were diagnosed at regional and distant stages, which are considered late stages. Survival is generally shorter than if cancers are diagnosed and treated at *in situ* or localized stages.

Stage at Diagnosis Among Whites, South Dakota 2001



Source: South Dakota Department of Health

Stage at Diagnosis among American Indians, South Dakota 2001



Source: South Dakota Department of Health

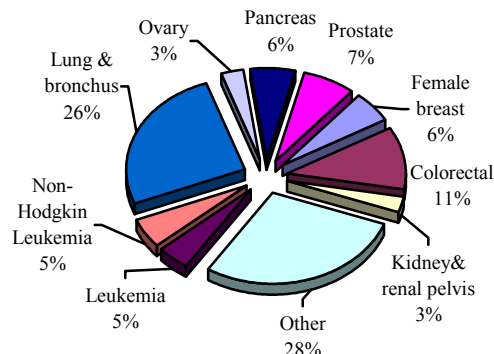
Mortality 2001

- There were 1,598 deaths due to cancer in 2001. Cancer accounted for 23.1 % of all deaths, i.e., 1 in 4 South Dakotans died of cancer.
- 1,524 or 95% were whites and 67 or 4 % were American Indians. American Indians had higher death rates than whites.
- The top four causes of deaths due to cancer were cancers of the lung and bronchus, colorectal, prostate and pancreas, accounting for 51% of total cancers.
- Approximately 25% of cancer deaths were among persons less than 50 years old and 50% died before attaining 75 years.
- More males than females died from cancer in 2001 with lung and bronchus leading for both sexes.
- Breast cancer claimed more young lives than any other cancer of either sex with 22% of women ages 50-64 years old and 16% under 50 years old.

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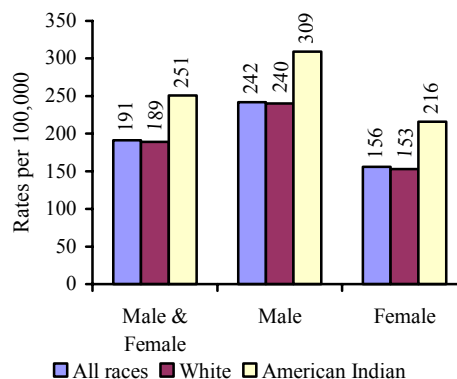
- South Dakota ranked lowest for breast cancer death rates among all states with 18.7 (range 18.7 - 38.8 deaths per 100,000 women).
- South Dakota's age-adjusted death rate was 190.7 compared to a U.S rate of 195.6 and Healthy People 2010 Objective of 159.9 deaths per 100,000 persons.
- Death rates varied from a low of 139.8 in Marshall County to a high of 291.8 in Shannon County.

Cancer Mortality, Selected Sites, South Dakota 2001



Source: South Dakota Department of Health

Age-Adjusted Death Rates by Race and Gender, South Dakota 2001



Note: Rates are per 100,000 persons age-adjusted to the 2000 U.S. standard population
Source: South Dakota Department of Health

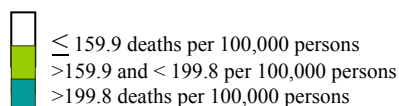
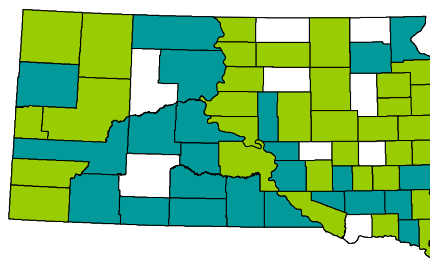
Age-Adjusted Death Rates for Selected Common Cancers by Race, South Dakota 2001

Primary site	Total	White	American Indian*
All sites	190.7	189.0	225.8
Breast, female	19.2	19.2	22.1
Cervix uteri	2.1	1.7	9.8
Colorectal	20.9	20.5	31.9
Lung & bronchus	50.7	50.2	61.4
Melanoma	3.1	3.3	0
Ovary	10.1	10.1	3.5
Pancreas	12.2	12.6	4.0
Prostate	33.6	33.1	49.6

Note: Rates are per 100,000 persons, age-adjusted to the 2001 U.S. standard population

Source: South Dakota Department of Health

All Sites Age-Adjusted Cancer Death Rates, South Dakota, 1997-2001



Source: South Dakota Department of Health

Trends in mortality 1997-2001

- Trends for the five-year rate change in mortality show a decrease for all sites combined with an annual percent change (APC) of -0.4% compared to a -0.9% APC nationally.
- Trends for the five-year rate change in death rates show decreases for stomach, non-Hodgkin lymphoma, myeloma, bladder, prostate, melanoma, colorectal, brain, breast, leukemia and kidney, renal pelvis, cervical and , oral cavity and pharynx cancers.
- Trends for the five-year rate change in death rates show increases for lung and bronchus, pancreas, ovary, liver, thyroid, esophagus, endometrial and Hodgkin lymphoma.
- South Dakota has achieved the Healthy People 2010 mortality rate objective of 159.9 deaths per 100,000 persons in 9 counties.

Annual Percent Change (APC) of Selected Sites by Race, South Dakota 1997-2001

Site	APC	
	White	American Indian
All cancer sites	-0.3	-1.7
Stomach	-7.7	-8.0
Myeloma	-2.6	*
Non-Hodgkin	-2.3	*
Bladder	-2.0	*
Prostate	-1.3	*
Melanoma (skin)	-1.0	*
Colorectal	-0.9	12.4
Brain & CNS	-0.9	*
Breast (female)	-0.9	*
Kidney and renal	-0.9	*
Leukemia	-0.8	
Oral cavity and	-0.6	*
Lung and bronchus	0.9	-3.0
Thyroid	1.3	*
Pancreas	2.2	-0.5
Ovary	2.5	-3.3
Cervix	3.9	*
Liver and bile duct	5.1	13.1
Esophagus	8.3S	*
Uterus	12.0	*

Source: South Dakota Department of Health;

Calculated with SEER Stat; *Counts were too low to calculate

S Statistically significant $p < 0.05$

Note:

From 1992 to 2001 the cancer death rates in South Dakota for all sites combined decreased 10 % for all races, 9 % for whites and 29 % for American Indians.

Years of potential life lost

This is another measure of the cancer burden among populations. The years of potential life lost are calculated for each individual who dies of a cancer of interest by determining the number of years of additional expected life if that person had lived to 75 years. The YPLL in the general population associated with a particular cancer is the sum of this expectation over all those individuals who died of that cancer in a particular year.

- For 2001 the YPLL to 75 years of age due to malignant neoplasms in South Dakota was 10,194 years, making it the highest of all causes followed by accidents with 9,615 years and heart disease with 7,196 years.
- During the five-year period 1997-2001, cancer ranked first in years of YPLL age-adjusted rates with 1,462 years per 100,000 persons for whites and 1,907 years for American Indians.

Contributing behavioral risk factors

The Harvard Report on Cancer Prevention in 1996 researched the risk factors for cancer. The estimated percent of total cancer deaths attributed to establish causes of cancer were:

Risk Factor	Percentage
Tobacco	30%
Adult diet/obesity	30%
Sedentary lifestyle	5%
Occupational factors	5%
Family history of cancer	5%
Viruses/biological agents	5%
Perinatal factors/growth	5%
Reproductive factors	5%
Alcohol	3%
Socioeconomic status	3%
Environmental pollution	2%
Ionizing /UV radiation	2%
Prescription drugs/medical procedures	1%
Salt/food additives/contaminants	1%

Prevention: South Dakota's Behavioral Risk Factor Surveillance System (BRFSS) tracks behavior for smoking, alcohol use, obesity, physical activity and nutrition. The following are data for adults ≥ 18 years in 2002²³

- 23% of South Dakotan adults currently smoke with the highest rate, 38%, among those 18-24 years.
- 21 % eat ≥ 5 fruits and vegetables every day.
- 24% report no physical activity.
- 39% are overweight, i.e., BMI 25-29.9.
- 26% are obese, i.e., BMI of ≥ 30 .
- 19% binge drink, i.e. 5 or more drinks.
- 5 % are chronic drinkers.

Skin cancer behavior was last surveyed in 2000⁴. The Healthy People 2010 objective calls for at least 60% to limit sun exposure, use protective clothing and use sunscreen and to avoid artificial sources of UV light. In 2001, only 12% of South Dakotans always used sunscreen, 23% always or almost always stay in the shade, 36% almost or almost always wear a hat and 13% almost or almost always wear long sleeves.

Early detection: BRFSS also collects early detection data. Healthy People 2010 objectives are included below in parentheses. In 2002 BRFSS found the following:

- 16 % of women ≥ 40 years have not ever had a mammogram and clinical breast exam.

² BRFSS online <http://apps.nccd.cdc.gov/brfss/>

³ Healthy behaviors of South Dakotans 2002

⁴ Healthy Behaviors of South Dakotans 2000

- 24% of women ≥ 40 years have not had a mammogram within 2 years before the survey (HP 2010 is 70%).
- 14% of women ≥ 18 years have not had a Pap smear within 3 years prior to the survey (HP 2010 is 10%).
- 58 % of those ≥ 50 have not a fecal Occult Blood test. (HP 2010 is 50%).
- 58 % of those ≥ 50 had neither a sigmoidoscopy nor a colonoscopy. (HP 2010 is 50%).
- 40% of men ≥ 40 have not had a Prostate Specific Antigen (PSA).
- 29% of men had not had a Digital Rectal Exam (DRE).

South Dakota Tobacco Control Program summary report (Fiscal year 2004) by Teri Christensen, Tobacco Control Program Project Director

More deaths are caused each year by tobacco use than by HIV/AIDS, illegal drug use, alcohol use, motor vehicle injuries, suicides, and murders *combined*, (*Centers for Disease Control and Prevention, 2/2004*). The following report provides a brief overview of South Dakota's Tobacco Control Program and the latest survey results related to tobacco use by populations with the highest rates of use.

In South Dakota, the Department of Health is the lead agency for statewide management of tobacco prevention and cessation efforts. The department's Tobacco Control Program, with input from the state's Tobacco Prevention Advisory Committee, updated its strategic plan in April 2004. The strategic plan is designed to achieve three goals:

- Prevent young people from starting to use tobacco products and reduce their access to tobacco products.

- Persuade and help smokers to stop smoking.
- Protect nonsmokers by reducing their exposure to second-hand tobacco smoke.

The graphics on pages 9-13 highlight tobacco use statistics related to each of these three goal areas.

Tobacco Consumption

The best estimate available for tobacco consumption in South Dakota is collected by the South Dakota Department of Revenue and is based on cigarette tax stamps sold and the tax paid by wholesalers/distributors for other tobacco products. This indirect method of measuring consumption is used by several other states. The following figures represent the number of cigarette tax stamps sold in a fiscal year and the tax paid by wholesalers for other tobacco products.

Fiscal Year	# of Cigarette Tax Stamps Sold	Tax Paid by Wholesalers for Other Tobacco Products
2004	52,322,330 for stamped packs of 20 cigarettes 153,701 for stamped packs of 25 cigarettes	\$1,362,950
2003	54,068,551 for stamped packs of 20 cigarettes 136,468 for stamped packs of 25 cigarettes	\$1,325,013
2002	56,265,587 for stamped packs of 20 cigarettes 131,739 for stamped packs of 25 cigarettes	\$1,246,834

NOTE: The tax rate for cigarettes increased on March 24, 2003 from \$0.33 to \$0.53 per pack.

Programming Efforts

The Tobacco Control Program is involved in a variety of efforts designed to prevent young people from starting tobacco use, encourage current smokers to stop, and protect non-smokers. Programming efforts are based on the Centers for Disease Control and Prevention's (CDC) *Best Practices for Comprehensive Tobacco Control Program*. The nine components of comprehensive tobacco control are: (1) community programming; (2) linkage to chronic disease programs; (3) school programming; (4) linkage to enforcement of tobacco control policies; (5) statewide programming; (6) counter-marketing; (7) cessation programming; (8) surveillance and evaluation; and (9) administration and management. South Dakota's activities in each of these areas are highlighted below.

Community Programming

Local programs involve young people, parents, community/business leaders, health care providers, school personnel, and others interested in tobacco prevention and control efforts. In FY04, the DOH awarded 21 communities up to \$20,000 each, along with staff support, for tobacco prevention efforts. Local activities range from providing education about tobacco use to assisting businesses and facilities with tobacco-free policies.

Linkage to Chronic Disease Programs

Addressing tobacco prevention in conjunction with chronic disease programs ensures wider dissemination of information. This linkage also leads to a broader range of methods to increase prevention and cessation efforts, especially for those with diseases that put them at increased risk of morbidity and mortality.

The Tobacco Control Program works closely with other Department of Health programs such as the Diabetes Control Program, Breast and Cervical Cancer Control Program and the Cardiovascular Disease Program to promote cessation, educate others on the dangers of tobacco use, and raise awareness about the harmful

effects of second hand smoke. Specific examples include providing information about the state's tobacco Quit Line to program clients and revising protocols for healthcare providers to include information about cessation and referral.

School Programming

The program collaborates with other agencies such as the Department of Education to promote tobacco prevention curricula and provide resources to schools around the state. These curricula have scientific evidence of reducing youth tobacco use. As in the past, the Tobacco Control Program continued to promote a prevention education infusion model which spreads the lessons across various subject areas over the school year. This enables the school to take on prevention education without undue burden on staff or compromising efforts to meet testing standards.

Linkage to Enforcement of Tobacco Control Policies

Enforcing tobacco control policies sends a message to the public that such policies are important and can help change the social norms associated with tobacco use.

The Tobacco Control Program works to support entities with tobacco-free policies as a means of reducing the negative role modeling to children and protecting non-smokers from secondhand smoke. Support includes educational materials, signage about existing policies and state law, and sample policies for organizations interested in voluntary smoke-free policies. The program also provides support to the Department of Human Services to conduct inspections of sales to minors as required by federal programming.

Statewide Programming

Statewide programming increases the effectiveness of local efforts, enhances the

skills and resources of local prevention volunteers and makes valuable use of resources that would otherwise be difficult

for individual communities to attain. Examples of statewide programming conducted by the program included a tobacco prevention conference for community coalitions, education and assistance to South Dakota colleges and universities about how to address tobacco use by 18 -24 year olds, and a Tribal Tobacco Policy Workshop at the Lakota Nations Conference as well as to individual tribal communities.

Counter-Marketing

Counter-marketing is intended to counter pro-tobacco influences. It has been documented that intense, sustained tobacco control media can produce significant declines in smoking by both youth and adults. It has also been shown that children are three times more affected by advertising than adults.

The Department of Health has sponsored a variety of media campaigns to counter pro-tobacco influences. Campaigns focused on spit tobacco use, secondhand smoke, and pregnant women and included radio and TV ads. In addition to these statewide campaigns, the program supported local tobacco prevention coalition counter-marketing efforts through education and materials.

Cessation Programming

More than 70% of smokers want to quit but few succeed without help. Telephone-based cessation counseling has been shown to at least *double* quitting success rates. The South Dakota Quit Line provides statewide

access to toll-free, telephone cessation counseling and also offers discounted nicotine replacement patches or prescription medicine to participants. The Quit Line has provided cessation services to more than 20,000 individuals since it started in January 2002, more than 3,000 in FY 2004. **In the second year of operation, the statewide Quit Line demonstrated a 35% prolonged quit rate, 12 months after service, for respondents reached at follow-up.** In comparison, only 5% of people who quit on their own are still abstinent a year later.

Surveillance and Evaluation

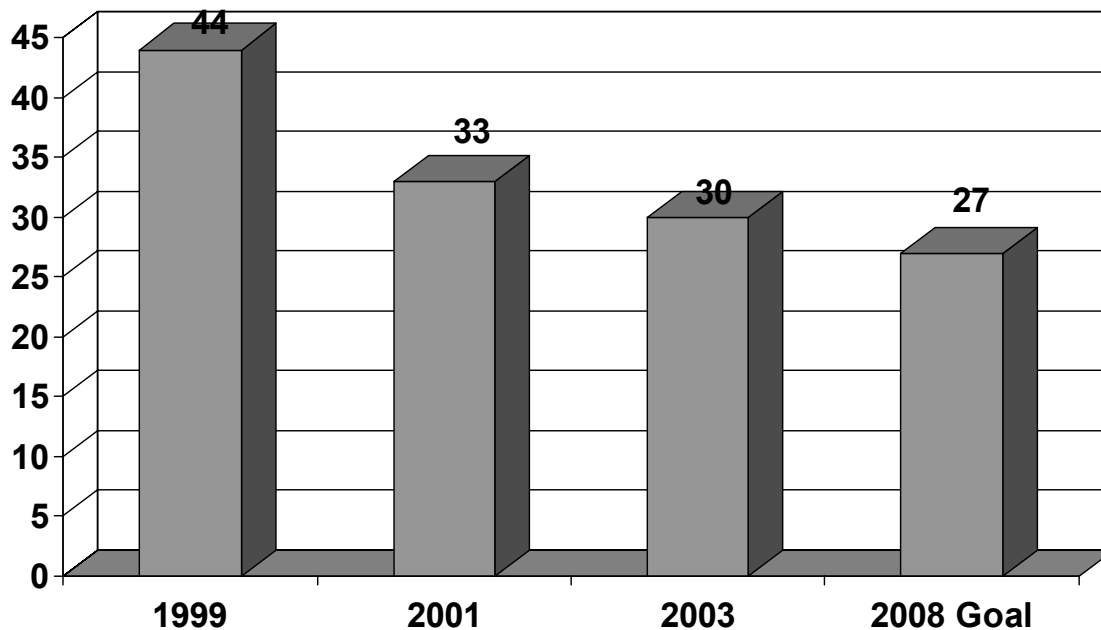
Monitoring tobacco-related behaviors and attitudes provides valuable information about progress toward goals and prevalence of tobacco use. Surveillance tools include the Youth Tobacco Survey. Key results from the 2003 survey are included in this report and additional results are on the Tobacco Control Program website, www.state.sd.us/doh/Tobacco. The Behavioral Risk Factor Surveillance System (BRFSS) survey, Adult Tobacco Survey, and information from the department's Office of Data, Statistics and Vital Records are also used to monitor attitudes and behavior related to tobacco use.

Administration and Management

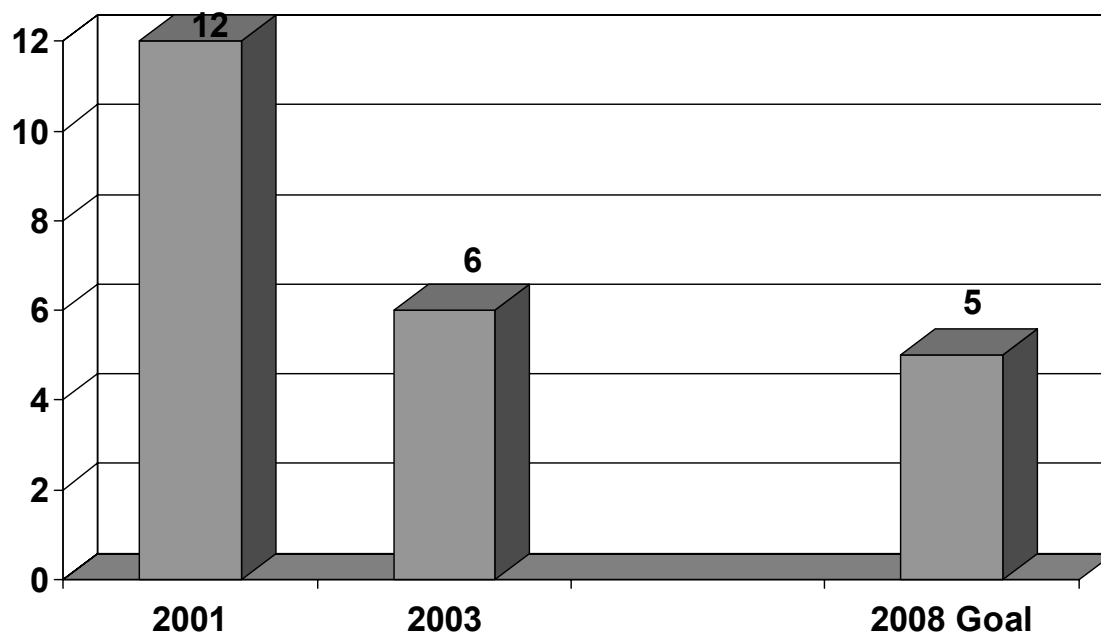
Effective programming requires strong program management and coordination of a variety of efforts. Tobacco Control Program staff integrate tobacco prevention efforts at the state and local level in all of the component areas of comprehensive tobacco control. Staff members include a Project Director, Program Coordinator, and a Media Coordinator.

Goal 1. Prevent young people from starting to use tobacco products.

The following graphics highlight tobacco use statistics related to Goal 1.

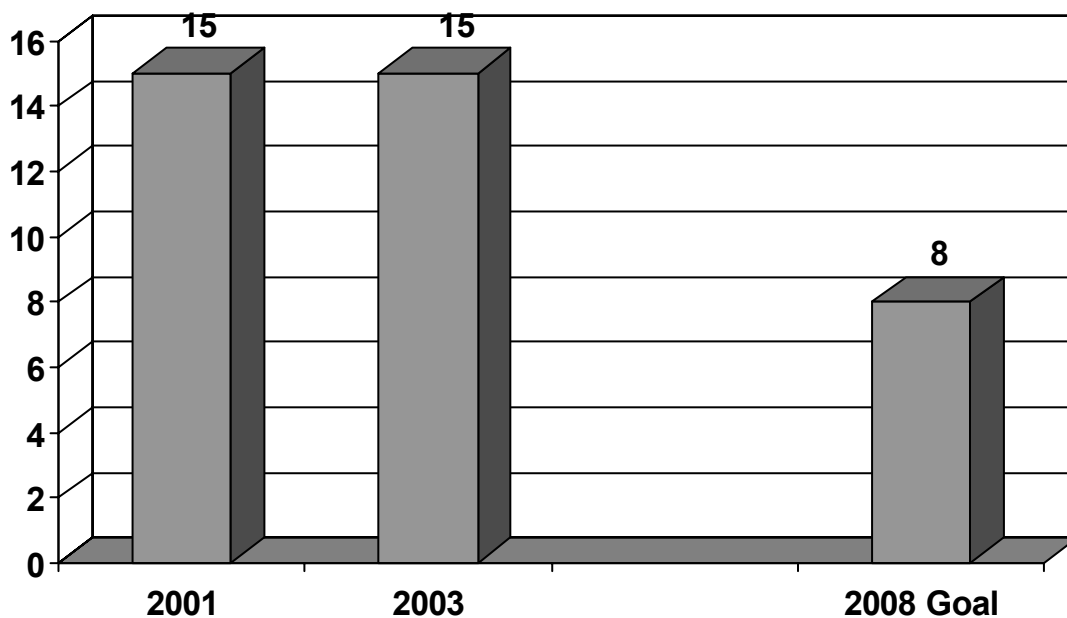
South Dakota Current Smokers, Grades 9-12

South Dakota Youth Risk Behavior Survey: Grades 9, 10, 11, and 12

South Dakota Current Smokers, Grades 6-8

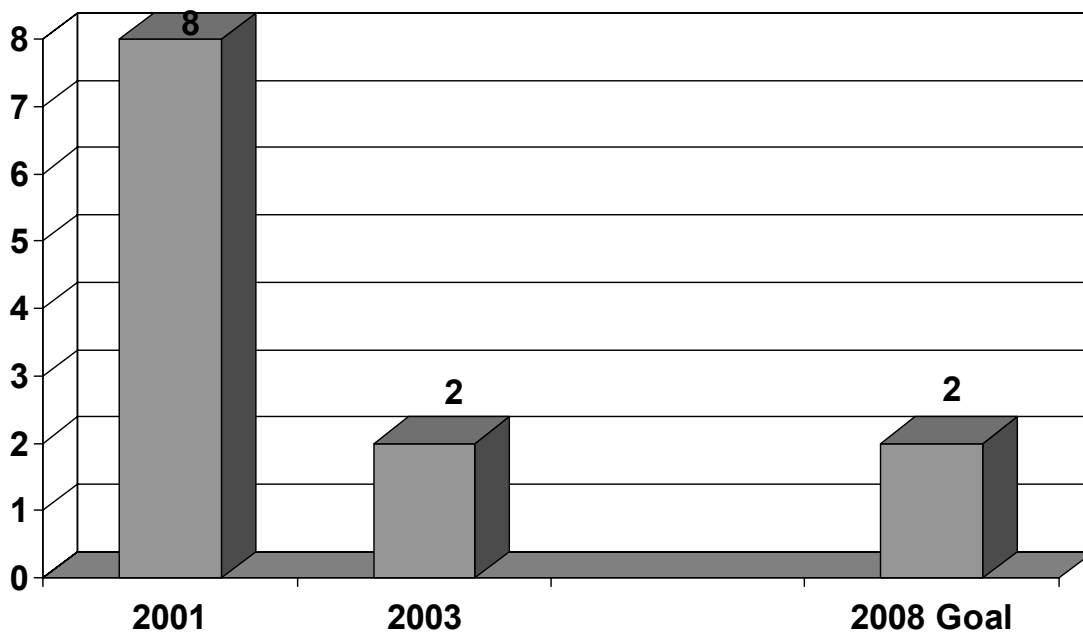
South Dakota Youth Tobacco Survey: Grades 6, 7, and 8

South Dakota Current Spit Tobacco Users, Grades 9 - 12



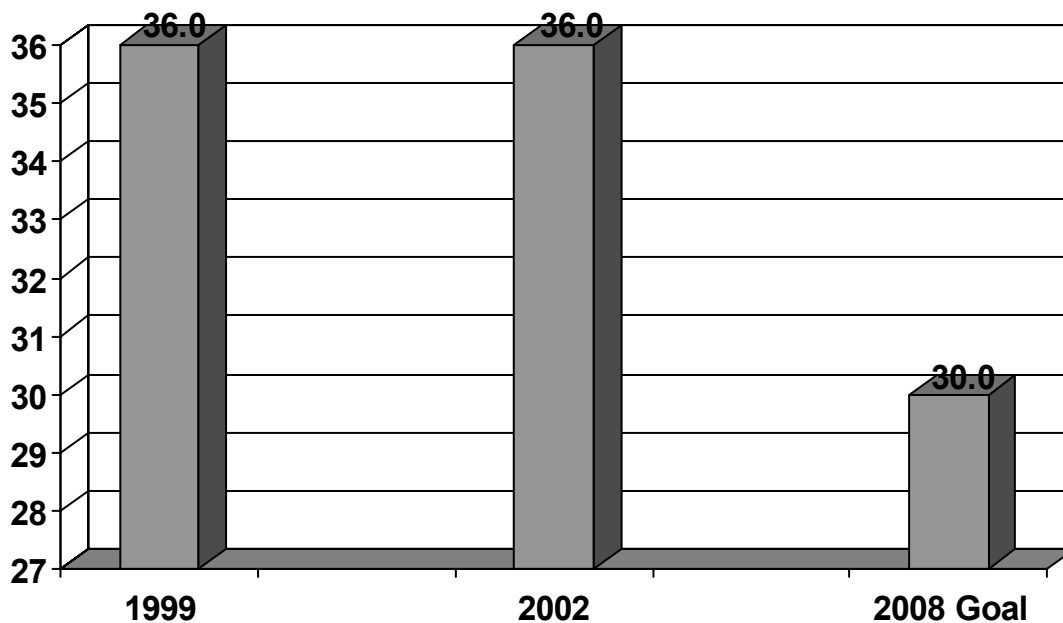
South Dakota Youth Risk Behavior Survey: Grades 9, 10, 11, and 12

South Dakota Current Spit Tobacco Users, Grades 6-8



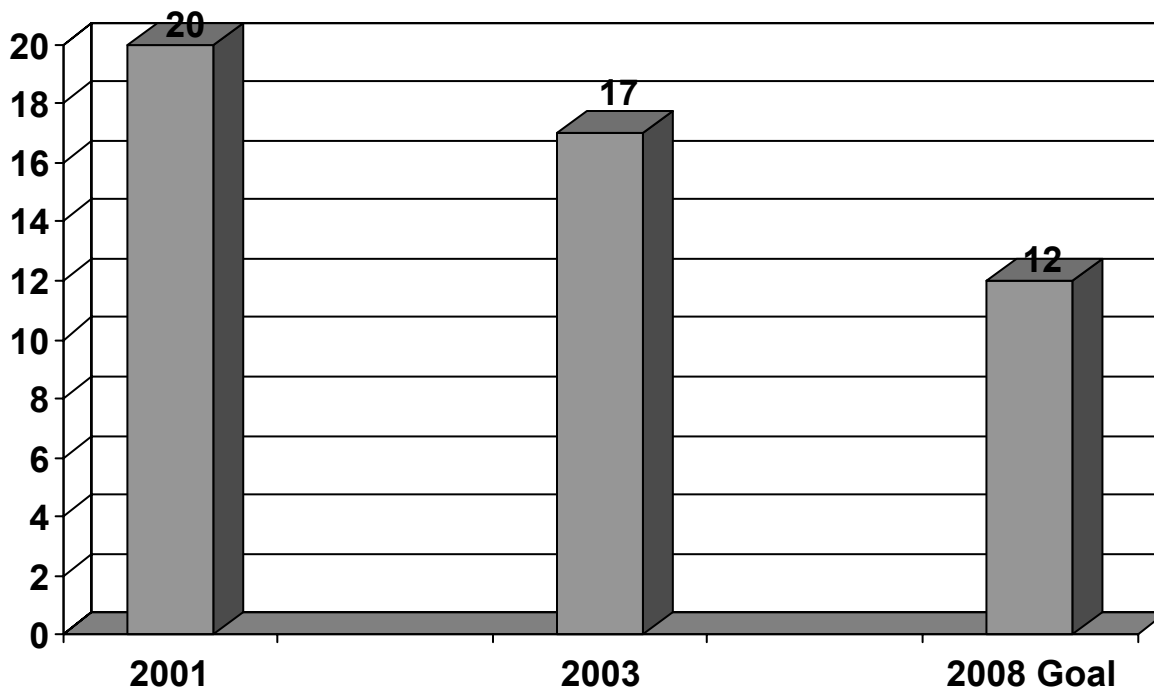
South Dakota Youth Tobacco Survey: Grades 6, 7, and 8

Percent of South Dakota 18-24 year olds who smoke



South Dakota Behavioral Risk Factor Surveillance System

Percent of South Dakota 18-24 year old males who use spit tobacco*



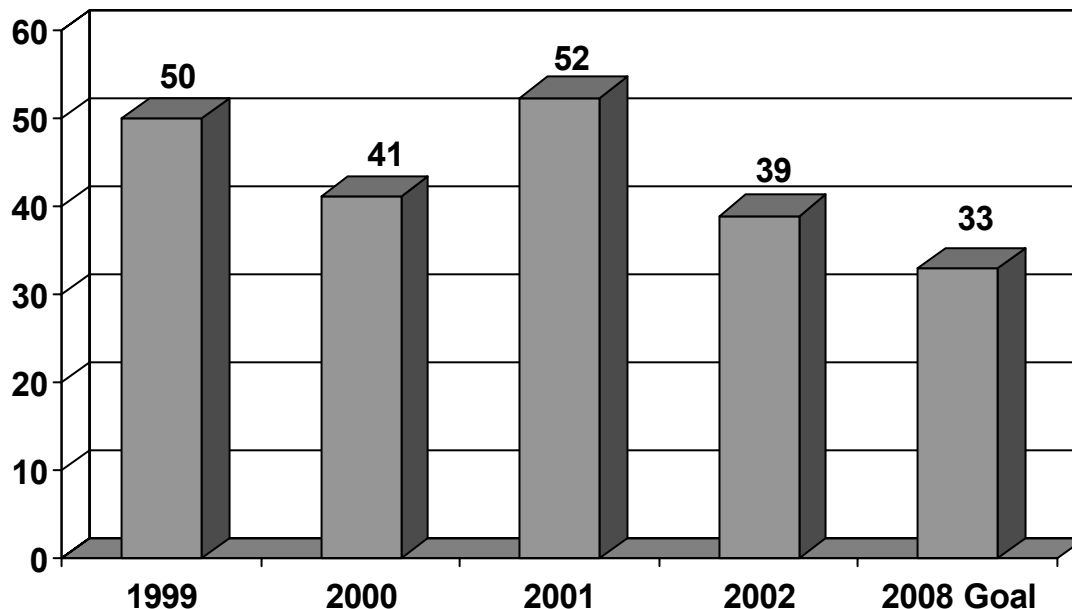
South Dakota Behavioral Risk Factor Surveillance System - * Some days or every day.
2003 data is yet to be published

Goal 2. Persuade and help smokers to stop smoking.

The following graphics highlight tobacco use by South Dakota adults.

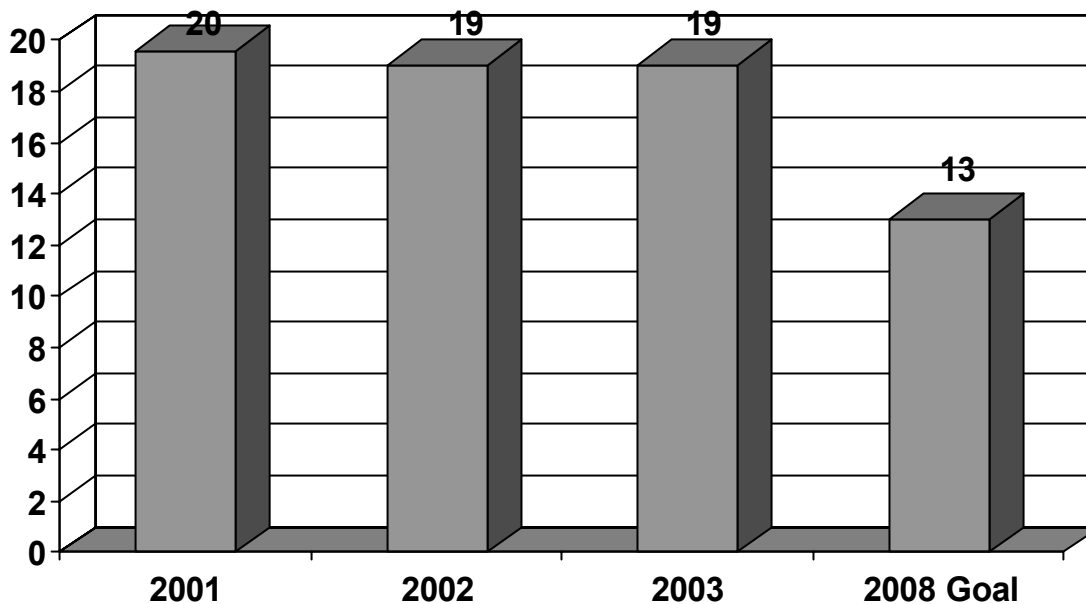
Percent of American Indians in South Dakota Who Smoke

South Dakota Behavioral Risk Factor Surveillance System

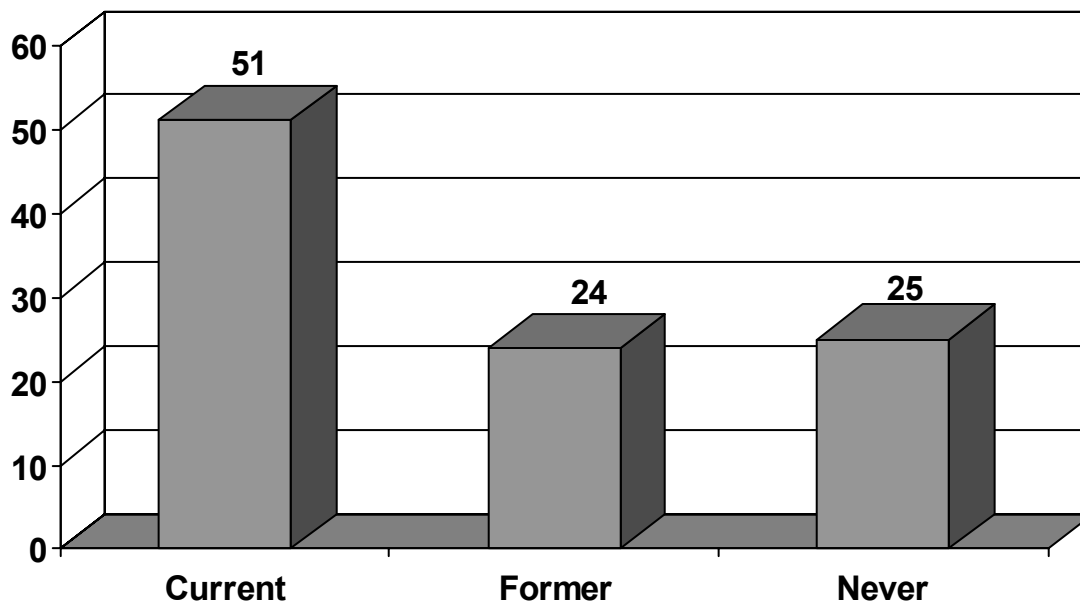


Percent of Pregnant Females in South Dakota Who Smoke During Pregnancy

Office of Data, Statistics & Vital Records, South Dakota Department of Health



Percent of South Dakota Medicaid Clients Who Smoke



Source: South Dakota Behavioral Risk Factor Surveillance System, 2000-2003

Goal 3. Protect nonsmokers by reducing their exposure to second-hand tobacco smoke.

According to the 2003 South Dakota Adult Tobacco Survey (ATS), 81% of respondents working indoors report that their employer's official policy does not allow smoking in any work area. Among those currently employed, 74% report smoking is not allowed in public areas. The ATS is being conducted currently, and this data will be reported in the next annual report.

For more information about this report, contact Teri Christensen, Tobacco Control Program Project Coordinator, at 605-773-3737.

South Dakota Department of Health - Infectious Disease Surveillance				
Selected Morbidity Report, 1 January – 31 November 2004 (provisional)				
	Disease	2004 year-to-date	5-year median	Percent change
Vaccine-Preventable Diseases	Diphtheria	0	0	na
	Tetanus	0	0	na
	Pertussis	65	7	+829%
	Poliomyelitis	0	0	na
	Measles	0	0	na
	Mumps	0	0	na
	Rubella	0	0	na
	<i>Haemophilus influenza</i> type b	0	0	na
Sexually Transmitted Infections and Blood-borne Diseases	HIV infection	19	21	-10%
	Hepatitis B	0	2	-100%
	Chlamydia	2321	1691	+37%
	Gonorrhea	267	253	+6%
	Genital Herpes	298	278	+7%
	Syphilis, primary & secondary	0	0	na
Tuberculosis	Tuberculosis	8	16	-50%
Invasive Bacterial Diseases	<i>Neisseria meningitidis</i>	2	5	-60%
	Invasive Group A <i>Streptococcus</i>	20	14	+43%
Enteric Diseases	<i>E. coli</i> O157:H7	33	43	-23%
	Campylobacteriosis	256	154	+66%
	Salmonellosis	122	108	+13%
	Shigellosis	13	18	-28%
	Giardiasis	73	97	-25%
	Cryptosporidiosis	40	15	+166%
	Hepatitis A	3	3	+0%
Vector-borne Diseases	Animal Rabies (through June 2004)	84	90	-7%
	Tularemia	4	7	-43%
	Rocky Mountain Spotted Fever	4	2	+100%
	Malaria (imported)	1	0	na
	Hantavirus Pulmonary Syndrome	1	0	na
	Lyme disease	1	0	na
	West Nile Virus disease	51	0	na
Other Diseases	<i>Streptococcus pneumoniae</i> , drug-resistant	5	1	+400%
	Legionellosis	4	3	+33%
	Additionally, the following diseases were reported: Bacterial Meningitis, non-meningococcal (16), chicken pox (43); <i>E. coli</i> , shigatoxin (2); Invasive Group B <i>Streptococcus</i> (10); Listeriosis (2); <i>Streptococcal</i> Toxic Shock Syndrome (1); MRSA, invasive (24)			

Communicable diseases are obligatorily reportable by physicians, hospitals, laboratories, and institutions.

The **Reportable Diseases List** is found at www.state.sd.us/doh/Disease/report.htm or upon request.

Diseases are reportable by telephone, mail, fax, website or courier.

Telephones: 24 hour answering device 1-800-592-1804; for a live person at any time call 1-800-592-1861; after hours emergency 605-280-4810. **Fax** 605-773-5509.

Mail in a sealed envelope addressed to the DOH, Office of Disease Prevention, 615 E. 4th Street, Pierre, SD 57501, marked "Confidential Medical Report". **Secure website:** www.state.sd.us/doh/diseasereport.htm.

